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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/136,483	08/19/1998	SUJEET KUMAR	2950.25US01	1810
62274 7590 03/01/2010 DARDI & HERBERT, PLLC 220 S. 6TH ST. SUITE 2000, U.S. BANK PLAZA MINNEAPOLIS, MN 55402				
EXAMINER				
KOSLOW, CAROL M				
ART UNIT		PAPER NUMBER		
1793				
MAIL DATE		DELIVERY MODE		
03/01/2010		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

09/136,483

Applicant(s)

KUMAR ET AL.

Examiner

C. Melissa Koslow

Art Unit

1793

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 November 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3, 5-8 and 11-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 5-8, 11-19, 21 and 22 is/are rejected.
- 7) ☒ Claim(s) 3 and 20 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SE/C.3)
Paper No(s)/Mail Date 11/2/09
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

The indicated allowability of claims 1, 2, 5-8, 19, 21 and 22 is withdrawn in view of the newly discovered references to WO 95/03907 and U.S. patent 5,384,306, which were cited by applicants in the information disclosure statement of 2 November 2009. Rejections based on the newly cited references follow.

Since prosecution was re-opened due to art found in the information disclosure statement of 2 November 2009, the allowability of all the pending claims was reconsidered with respect to the previously cited art, with respect to 35 USC 112 and a new search was preformed.

The indicated allowability of claims 17 and 18 is withdrawn in view of the reconsideration of the article by Borsella et al. The indicated allowability of claims 13 and 14 is withdrawn in view of a newly discover 35 USC 112 issue. The indicated allowability of claims 1, 5 and 11-16 is withdrawn in view of the newly discovered reference to U.S. 6,602,439. Rejections based on 35 USC 1112 and these references follow.

The Japanese Office Action cited in the information disclosure statement of 2 November 2009 has been considered with respect to the provided English translation. DE 4009299; JP 6-247712; JP 6-92712 and JP 3-80106 all cited in the information disclosure statement of 2 November 2009 have been considered with respect to the provided English abstracts.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 13 and 14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 13 and 14 recites the limitation "the dispersion". There is insufficient antecedent basis for this limitation in the claims or in claim 11 from which they depend.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 and 2 are rejected under 35 U.S.C. 102(b) as being anticipated by WO 95/03907.

This reference teaches nanostructured or nanosized particles and the method for making the particles. Table 2 teaches a collection of alumina nanoparticles, or primary particles, having an average diameter of 18 nm and wherein all the particles are within the range of 8-50 nm, which the reference defines as "width". The average diameter falls within the claimed ranges and the maximum particle diameter of 50 nm is less than 3 times the average diameter of 18 (which is 54). The reference teaches the claimed collection of alumina particles.

Claims 1, 5, 6, 8, 19 and 21 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. patent 5,384,306.

This reference a collection of unagglomerated, or primary, oxide particles (col. 1, lines 15-17). The oxide can be alumina and the particles have an average diameter in the range of 1-500 nm, preferably 1-50 nm and at least 99% of the particles have a diameter greater than 40% of the average and less than 140% of the average and none of the particles have a diameter greater than 60% of the average and less than 160% of the average. The taught minimum size of 1 nm falls within the scope of "about 5 nm". The taught size distribution ranges falls within the

claimed ranges and none of the particles have a diameter greater than about 3 or about 2 times the average diameter. The reference teaches the claimed collection of particles.

Claims 17 and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by the article by Borsella et al.

This article teaches producing a collection of alumina particles having an average diameter of 15-20 nm by flowing a molecular stream comprising trimethylaluminum, an aluminum precursor; N_2O , an oxidizing agent; and ethylene gas, one of applicants' defined infrared absorber; through a reaction chamber and pyrolyzing the flowing molecular stream in the reaction chamber where the pyrolysis is driven by the heat absorbed from a continuous wave laser beam. The reference teaches the claimed method.

The declaration under 37 CFR 1.132 filed 21 December 2006 is insufficient to overcome the rejection of claims 17 and 18 based upon this article. Section 5 of the declaration discussed this article and in that section Dr. Li states the particles resulting from the disclosed process do not disclose or suggest the claimed particles. While this is correct with respect to claims 1-3, 5-8, 11-16 and 19-22, which are directed to particles having a defined particle size distribution; the rejected claims 17 and 18 is directed to method for making a collection of alumina particles having an average diameter of 15-20 nm. There is no particle size distribution defined in these claims and thus the particles of the article fall within the scope of the particles made by the process of claims 17 and 18. It should be noted that figure 2a shows that the as synthesized particles are not amorphous as argued, but have a gamma crystal structure. This is also discussed in the paragraph started on page 1346.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 2, 5-7, 19, 21 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. patent 5,384,306.

As stated above, this reference teaches a collection of unagglomerated, or primary, oxide particles (col. 1, lines 15-17). The oxide can be alumina and the particles have an average diameter in the range of 1-500 nm, preferably 1-50 nm and at least 99% of the particles have a diameter greater than 40% of the average and less than 140% of the average and none of the particles have a diameter greater than 60% of the average and less than 160% of the average. The taught average particle size range overlaps that of claim 2 and the taught distribution of a diameter of greater than 40% of the average and less than 140% of the average overlaps the distributions of claims 7 and 22. Product claims with numerical ranges which overlap prior art ranges were held to have been obvious under 35 USC 103. *In re Wertheim* 191 USPQ 90 (CCPA 1976); *In re Malagari* 182 USPQ 549 (CCPA 1974); *In re Fields* 134 USPQ 242 (CCPA 1962); *In re Nehrenberg* 126 USPQ 383 (CCPA 1960). Also see MPEP 2144.05. The reference suggests the claimed collections of alumina particles.

Claims 1, 5 and 11-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. patent 6,602,439.

This reference teaches a collection of alumina primary particles having an average diameter in the range of about 100 nm to about 750 nm (col. 34, lines 66-67 and col. 36, lines 45-

46). This size range overlaps that claimed. These particles have a distribution where at least about 95% of the particles have a size that is not larger than twice the average. This range of “at least 95%” overlaps the claimed range of “less than about one in 10^6 ”. The reference teaches that these particles are used in chemical mechanical polishing compositions and that chemical mechanical polishing compositions comprise 7-17 wt% of the particles, as the abrasive particles, in a liquid medium, such as an aqueous medium (col. 39, lines 5-13). Since the reference teaches liquid mediums in general and teaches the preferred one is aqueous, this suggests to one of ordinary skill in the art that any other known polishing liquid medium can be utilized, even though it is not preferred, such as non-aqueous mediums. Column 39, lines 56-60 and the claims of the reference teaches that the polishing composition can also contain a mixture of abrasive particles produced by the taught process. Thus the reference teaches the polishing composition can contain the disclosed alumina particles and a second oxide, such as ceria or silica particles. The taught process form colloidal sized particles and thus teaches colloidal silica. Therefore the reference suggests the claimed collection and compositions.

Claims 3 and 20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

There is no teaching or suggestion of a collection of γ -alumina particles where the particles have an average diameter of primary particles from about 5 nm to about 500 nm and either a distribution of particle sizes where at least about 95% of the particles have a diameter greater than about 40 % of the average diameter and less than 160% of the average diameter or

where less than about 1 in 10^6 particles have a diameter greater than about 3 times the average diameter.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melissa Koslow whose telephone number is (571) 272-1371. The examiner can normally be reached on Monday-Friday from 8:00 AM to 3:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jerry Lorengo, can be reached at (571) 272-1233.

The fax number for all official communications is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/cmk/
March 1, 2010

/C. Melissa Koslow/
Primary Examiner
Art Unit 1793